



DISASTERS, CLIMATE CHANGE AND REGIONAL DEVELOPMENT IN RIO GRANDE DO SUL: SOCIOLOGICAL APPROACHES FOR A THEORETICAL REFLECTION UNDER THE NEW CLIMATIC REGIME

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Abstract: This article offers a theoretical, methodological and epistemological reflection on the dynamics of regional development in light of climate change and disasters within the New Climatic Regime. The analysis adopts a sociological approach that rejects the naturalization of disasters, understanding them as socially constructed phenomena rooted in historical, economic and political processes. It discusses the limits of the traditional notion of natural disasters, arguing that this conception absolves social actors of responsibility and obscures the structures that produce risks and vulnerabilities. Grounded in the theories of risk society, the New Climatic Regime and the Anthropocene, the discussion shows how industrial modernity generates global and uncertain risks, turning disasters into expressions of conflict and inequality, and explores the interdisciplinary and sociotechnical character of the disputes surrounding the definition and management of these events. The focus then shifts to the Brazilian context, highlighting how disasters reflect failed development strategies that deepen inequalities and environmental injustices. The critical analysis of the vulnerability paradigm reveals its relationship with social processes such as disorderly urbanization, institutional precariousness and exclusion. The case of the 2023-2024 floods in Rio Grande do Sul illustrates these dynamics, revealing that the distribution of human damage correlated with pre-existing indicators of municipal institutional capacity. Methodologically, the article is grounded in a systematic bibliographic review of the sociological literature on disasters. It concludes by affirming the centrality of sociology in the critical understanding of disasters and their links to regional development models.

Keywords: Disasters; climate change; regional development; New Climatic Regime; social vulnerability.

1 Introduction

The floods that struck Rio Grande do Sul between 2023 and 2024, considered the largest in the state's history, publicly exposed an equation that disaster sociology had already been attempting to decipher for decades: that disasters are not purely natural occurrences, but rather socially constructed phenomena, rooted in the historical, economic and political processes through which territory is produced (Valencio, 2014). The simultaneous collapse of urban drainage systems, civil defense and protection systems, and regional planning in dozens of municipalities across Rio Grande do Sul made clear that the vulnerability of the affected populations does not stem solely from the

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rainfall intensity of the hydrometeorological event, but from decades of regional development choices that neglected risk management.

From a theoretical standpoint, this article proceeds from the premise that such events must be interpreted in light of what Latour (2020) termed the New Climatic Regime, a historical context in which anthropic action has acquired geological scale, characterizing the Anthropocene, and in which the modern distinction between nature and society, as critiqued by the same author in an earlier work (Latour, 1994), loses its explanatory capacity. Within this scenario, the notion of risk society, coined by Beck (2011), offers the sociological key to interpretation: contemporary risks, unlike pre-modern risks, are produced by industrial modernization itself and are unevenly distributed across social classes, territories and population groups.

This is, however, a topic still little explored at the specific intersection between regional development and disaster sociology in the context of Rio Grande do Sul, which points to a relevant research gap: although Brazilian disaster literature has been consolidated by authors such as Valencio (2009; 2014) and Marchezini, it still lacks fuller theoretical articulation with the international debate on the New Climatic Regime and risk society, particularly when applied to regional case studies in Rio Grande do Sul.

The relevance of the topic is further justified by the practical urgency that climate disasters have assumed on the Brazilian regional development agenda, insofar as Rio Grande do Sul figures simultaneously among the states of greatest economic relevance to national agribusiness and among the territories most recently exposed to extreme hydrometeorological events, which imposes on disaster sociology the task of theoretically qualifying the public debate, frequently dominated by technocratic or fatalistic explanations that obscure the political dimension of risk production.

Given the above, the general objective of this article is to analyze, from a sociological perspective, the relationship between disasters, climate change and regional development in Rio Grande do Sul, taking the concept of the New Climatic Regime as its theoretical reference. Its specific objectives are: (1) to systematize the international theoretical debate on risk society and disaster sociology; (2) to analyze the contribution of Brazilian disaster sociology to the critique of civil defense technicism; and (3) to discuss, drawing on the case of the 2023-2024 floods, the multilevel governance



challenges that the New Climatic Regime imposes on regional development in Rio Grande do Sul.

Methodologically, the article is grounded in a systematic bibliographic review of the sociological literature on disasters, with emphasis on the founding authors of the American field (Fritz, Dynes and Quarantelli), the theorists of risk society and the New Climatic Regime (Beck and Latour), the social vulnerability literature (Tierney, Oliver-Smith, Peek and Wisner) and specialized Brazilian scholarship (Valencio and Marchezini), complemented by documentary research on state decrees recognizing emergency and public calamity situations. The reviewed contributions were systematized into three central analytical axes, the civilizational-planetary axis of the New Climatic Regime, the structural axis of risk society, and the territorial-institutional axis of social vulnerability, which are subsequently articulated in the reading of the 2023-2024 flood case in Rio Grande do Sul. To this end, the text is organized into seven sections, including this introduction: the second section discusses the New Climatic Regime and risk society; the third examines the transition from the hazard paradigm to the vulnerability paradigm in international disaster sociology; the fourth section analyzes the contribution of Brazilian disaster sociology; the fifth discusses the case of the 2023-2024 floods in Rio Grande do Sul; the sixth promotes an integrated theoretical discussion; and, finally, the concluding remarks synthesize the main findings and point to future research agendas.

2 The New Climatic Regime and Risk Society: Theoretical Foundations

2.1 From the Anthropocene Hypothesis to the Rupture of the New Climatic Regime

Bruno Latour, in a work of maturity dedicated to revisiting his own anthropological project, proposes that contemporary humanity lives under a New Climatic Regime, a historical landmark that succeeds the modern regime previously described in *We Have Never Been Modern* (Latour, 1994). In that seminal work, the author had already denounced the constitutive fallacy of Western modernity, namely, the artificial separation between nature and society, between objects and subjects, between science and politics, a separation that allowed modernity to proliferate hybrids between these two poles without ever acknowledging them as such. The Anthropocene, a geological concept incorporated by environmental sociology, marks precisely the



moment at which this separation becomes untenable: human action reaches geological scale, altering planetary biogeochemical cycles, such that it is no longer possible to conceive of society and nature as independent spheres (Latour, 2020).

The New Climatic Regime, therefore, designates not merely the climate crisis as a physical phenomenon, but above all a shift in the very conditions of possibility of politics itself, insofar as territories, borders, sovereignties and national identities must be rethought from the standpoint of where to land, a metaphor Latour develops to express the urgency of finding common ground between populations and the Earth in times of climate deregulation. For the purposes of this article, the New Climatic Regime hypothesis provides the macro-historical frame within which regional environmental disasters, such as the floods in Rio Grande do Sul, must be read, not as isolated and exceptional events, but as symptoms of a planetary condition that also manifests at the regional and municipal scale.

In this same work, Latour (2020) argues that the New Climatic Regime demands the overcoming of the traditional opposition between the local and the global, replacing it with the notion of the terrestrial, understood as the critical zone in which living beings, soils, waters and atmosphere compose a system of interdependencies that no administrative boundary can effectively delimit. This formulation carries direct implications for regional development planning, insofar as it suggests that territorial public policies can no longer be designed on exclusively administrative or economic criteria, but must incorporate, from their very conception, the biophysical limits of the territory in which they operate.

2.2 Risk Society in Beck: The Social Production of Risk

If Latour provides the civilizational frame, Ulrich Beck offers the conceptual instruments for understanding the social distribution of contemporary risks. According to the German sociologist, classical industrial modernity, centered on the production and distribution of wealth, gives way to an industrial risk society, in which the social production of wealth is systematically accompanied by the social production of risks (Beck, 2011). Unlike pre-modern hazards, of natural or divine origin, the risks of contemporary society are manufactured risks, resulting from human decisions about



technology, industry and development models, and are characterized by invisibility, transboundary reach and global catastrophic potential.

Beck's thesis of individualization and reflexivity of modernization is complemented, in contemporary debate, by the readings of Oliver-Smith and Tierney, who shift the Beckian focus from generic risk toward specifically situated social vulnerability. For these authors, disaster is not the sudden eruption of an external hazard upon an otherwise neutral society, but the outcome of a long-term process of accumulation of social, economic and institutional vulnerabilities, such that Beck's risk society must be complemented by a historical sociology of vulnerability (Tierney, 2014). Thus, although operating on distinct scales, planetary in Latour, structural in Beck, and territorial-historical in Tierney and Oliver-Smith, these three bodies of theory converge in rejecting the naturalization of disasters and in affirming that contemporary climate risks are, above all, political and social phenomena.

It should be noted, however, that Beck's thesis of the individualization and democratization of risk has been the object of relevant critiques from Latin American and Brazilian disaster sociology. Authors such as Oliver-Smith (2010) and, in Brazil, Valencio (2009), argue that, although climate risk in its physical dimension does not in fact respect boundaries of class, race or nation, the differential capacity for anticipation, absorption and recovery in the face of that risk remains strongly stratified, such that the thesis of the democratization of risk must be qualified when applied to contexts of deep structural inequality, such as the Brazilian one. This qualification does not invalidate Beck's theoretical contribution, but rather points to the need for its articulation with the social vulnerability literature, a task to which the following section of this article is dedicated.

Beck (2011) further argues that risk society produces what he terms reflexive modernization, a process through which the very institutions responsible for managing risks themselves become objects of contestation and critical reflection on the part of civil society. Applied to the field of civil defense and protection, this thesis suggests that the legitimacy of disaster-response institutions increasingly depends on their capacity to publicly acknowledge the limits of their own technical competence and to incorporate, into their decision-making processes, forms of knowledge and social participation that go beyond traditional technical-scientific expertise.



3 From the Hazard Paradigm to the Vulnerability Paradigm: The Sociological Turn in Disaster Studies

3.1 The Foundations of American Disaster Sociology

Disaster sociology consolidated itself as an autonomous disciplinary subfield from the second half of the twentieth century onward, largely owing to the pioneering work of Charles Fritz, Russell Dynes and Enrico L. Quarantelli, founders of the Disaster Research Center at Ohio State University. As early as 1961, the field defined disaster as “a concentrated event, in time and space, that causes significant disruption to society” (Quarantelli, 1998, p. 1), a seminal definition that shifted the analytical focus from the physical event (hazard) to its effects on social organization. Quarantelli, for his part, devoted a substantial portion of his work to problematizing the very definition of disaster, arguing that the question “what is a disaster?” is not merely semantic, but structuring for the definition of response policies and for the delimitation of the field's own object of research (Quarantelli, 1998).

This conceptual dispute is not confined to the strictly sociological field, revealing instead the interdisciplinary and sociotechnical character of the controversies surrounding the definition and management of these events. Engineers, meteorologists, legal scholars, public managers and social scientists each mobilize, from their own technical and institutional repertoires, distinct and at times competing definitions of what constitutes a disaster, with direct implications for which public policies are considered legitimate, prioritized and eligible for funding. Recognizing this sociotechnical dimension of the conceptual dispute is a precondition for understanding why, in the following section, the Brazilian critique of civil defense technicism takes the form of a dispute over interpretive authority regarding the disaster phenomenon itself.

Perry (2017), revisiting decades of conceptual debate in the field, systematizes the distinction established in the literature between hazard and disaster: while the former designates the potentially damaging physical event, be it hydrometeorological, geological or technological, the latter only takes shape when that event produces significant social and structural disruption to a given organized social system. An extreme event that strikes uninhabited territory, from this perspective, constitutes a hazard without configuring a disaster, whereas the same event, upon striking a vulnerable urban center, produces a



disaster precisely by interrupting social routines, overburdening institutional response capacities and altering, even if temporarily, the boundary between the public and the private.

Dynes, in turn, contributed decisively to understanding disasters as events that reveal, rather than merely produce, structural contradictions within society, enabling comparative analysis of social systems under limit conditions (Dynes, 1970). This initial functionalist perspective, although later criticized for its excessive emphasis on social cohesion and post-disaster consensus, laid the empirical and methodological foundations for the field's subsequent development, particularly with respect to rapid field-research methodology applied immediately after the event, a practice consolidated by the Disaster Research Center and still adopted today by international research teams.

It should further be noted that the tradition founded by these authors built up, over decades, an extensive comparative empirical base on collective behavior in disaster situations, contributing to the deconstruction of myths widely disseminated in common sense and even in part of the technical literature, such as the supposed generalized occurrence of collective panic, indiscriminate looting or the moral collapse of affected populations. These findings, systematized by Quarantelli (1998), show that collective behavior in disaster situations tends, contrary to the panic myth, to be characterized by spontaneous cooperation and emergent solidarity among those affected, which reinforces the need for public policies that recognize and strengthen these community capacities rather than treating them as an obstacle to institutional technical action.

3.2 Social Vulnerability as a Long-Term Process

From the 1990s onward, disaster sociology underwent a fundamental paradigmatic shift, moving from the hazard paradigm, centered on the triggering physical event, to the vulnerability paradigm, centered on the pre-existing social conditions that determine the unequal distribution of impacts. Oliver-Smith, an anthropologist dedicated to the historical reconstruction of disasters, argues that vulnerability is not a natural attribute of certain populations, but the outcome of historical processes of economic, political and territorial marginalization, whose origins frequently predate the triggering event by decades (Oliver-Smith, 2010). Kathleen Tierney, in turn, systematizes this perspective in the notion of the social roots of risk, according to which disasters are not



accidents, but predictable products of institutional, economic and political arrangements that systematically produce risks while simultaneously distributing, unequally, the capacity to confront them (Tierney, 2014).

In this sense, the concept of social vulnerability comes to be understood not as a static datum measurable by a single indicator, but as a dynamic process of social construction that changes across time and space, incorporating variables such as class, race, gender and generation. Along these lines, Peek has devoted particular attention to child and youth vulnerability in disaster contexts, showing how the institutional architecture of response frequently renders invisible the specific needs of children and adolescents, reproducing pre-existing inequalities even at the moment of the disaster's supposed exceptionality (Peek, 2008). The convergence among these contemporary authors, articulated theoretically by Beck (2011) and empirically supported by the social vulnerability literature, consolidates the thesis that disasters function as revealers, rather than creators, of the structural inequalities of a given social formation.

The international social vulnerability literature has further consolidated analytical models aimed at explaining the relationship between long-term social processes and the situated production of risk, among which the pressure-and-release model stands out, articulating, in causal sequence, the structural roots of inequality, intermediate dynamic pressures, such as accelerated urbanization and environmental degradation, and the unsafe conditions proper, which materialize at the moment of the extreme event (Wisner et al., 2004). This model, widely incorporated by the international disaster risk reduction literature, reinforces the thesis that vulnerability cannot be understood in isolation from the historical process of territorial development that produced it, connecting directly to the discussion undertaken in section 5 of this article regarding regional development in Rio Grande do Sul.

4 Brazilian Disaster Sociology: Valencio, Marchezini and the Critique of Technicism

4.1 Civil Defense Technicism and Victim-Blaming

In Brazil, the consolidation of disaster sociology as a research field is owed, to a large extent, to the pioneering work of Norma Valencio, who since the early 2000s has



been systematizing a forceful critique of what she terms the technicism of the national civil defense and protection system. According to the author, the Brazilian technical-operational apparatus tends to reduce disaster to a matter of engineering and logistics, systematically neglecting the “multidimensional social suffering of the groups affected by disasters” (Valencio, 2014, p. 3631), which results in a structural, institution-wide absence of any concern with the symbolic, psychosocial and relational dimensions of the disaster experience. In this sense, Valencio (2009) argues that Brazilian civil defense, by concentrating on physical containment works and standardized emergency-response protocols, ends up reproducing, rather than correcting, the vulnerability of the poorest populations, insofar as it ignores the deep social causes that produce differential exposure to risk.

Disasters in Brazil should, from this perspective, be understood as reflecting failed development strategies that deepen pre-existing inequalities and environmental injustices. The national literature associates the production of vulnerability with concrete and cumulative social processes, among which stand out disorderly urbanization, which pushes low-income populations into environmentally fragile areas; institutional precariousness and the lack of governance capacity in municipal civil defense and protection agencies; and exclusion and poverty, identified by the literature as the most determinant variable in the unequal distribution of risk (Valencio, 2009). The case of Rio Grande do Sul in 2023-2024, discussed in section 5 of this article, is emblematic of this relationship, insofar as the floods materialized systemic vulnerabilities in which the regional development model itself directly intervened in the observed risk patterns.

The author further denounces what she calls victim-blaming, an institutional discursive mechanism through which responsibility for the damage suffered is shifted from the state sphere and the territorial development model onto the alleged imprudence of the affected populations themselves, who are said to have chosen to reside in risk areas. Such a narrative, by concealing the historical and political production of land irregularity and the occupation of environmentally vulnerable areas, exempts public authorities from their preventive responsibility and perpetuates cycles of uncritical reconstruction in repeatedly affected risk zones.

According to Valencio (2009), a process of normalization of exceptionality can further be observed in Brazil, characterized by the recurrent succession of municipal and



state emergency and public-calamity decrees without such recurrence translating, institutionally, into a rupture of the structural cycle of vulnerability production. The repetition of the state of exception, paradoxically, tends to naturalize the very condition of vulnerability, turning crisis into administrative routine and gradually depleting its capacity to mobilize medium- and long-term preventive investment. This diagnosis engages directly with Agamben's (2004) critique of the state of exception as a technique of government, even though the Brazilian disaster literature applies it specifically to the management of hydrological and climate risks.

The literature on child vulnerability systematized by Peek (2008) finds direct resonance, finally, in the Brazilian critique of technicism, insofar as both converge on the finding that socially marginalized groups, whether defined by age, income or territorial location, tend to be systematically rendered invisible in both the preparedness and response phases of disasters. The absence of specific child-protection protocols in shelter settings, for instance, illustrates how the technicist logic, by treating the affected population as a homogeneous mass, reproduces, within the very apparatus of protection, the inequalities it should mitigate.

4.2 Marchezini and the Sociological Mediation of Warning Systems

Victor Marchezini, a researcher affiliated with the National Center for Monitoring and Early Warning of Natural Disasters (Cemaden), has dedicated his work to investigating the role of the social sciences in disaster risk reduction, with particular emphasis on early warning systems, school vulnerability and community engagement. His scholarship shows that the technical effectiveness of a warning system, however technologically sophisticated, depends critically on its capacity to be translated into effective social action, which presupposes in-depth knowledge of community dynamics, channels of institutional trust and the barriers to information access faced by vulnerable populations. Without this sociological mediation, even a technically precise warning may fail to produce an adequate protective response, revealing the limits of purely technocratic approaches.

Valencio, Siena and Marchezini (2011), in research dedicated to hydrological risk and disaster management, further demonstrate how the authority structure of provisional shelters frequently debases family and community roles, imposing routines



that disregard the values, habits and minimal autonomy of those affected, which constitutes, in itself, an additional form of social suffering imposed by the very apparatus of protection. These findings reinforce the need for a multisegmented approach to civil defense, capable of articulating health, social assistance, education, public security and urban planning around a genuinely integrated governance of risks and disasters.

A joint reading of Valencio's and Marchezini's scholarship allows one to affirm that Brazilian disaster sociology does not merely import international theoretical tools uncritically, but instead produces an original contribution centered on denouncing the institutional abandonment of the poorest populations and proposing alternatives anchored in the active listening of community knowledge. This contribution engages directly with the Beckian critique of reflexive modernization discussed in section 2.2, insofar as both converge on the need to subordinate technical-scientific knowledge to broader processes of deliberation and social participation, a thesis that underpins the proposal for horizontal and multilevel governance developed in section 6 of this article.

5 Regional Development and Disasters in Rio Grande do Sul: The 2023-2024 Floods as a Critical Case

5.1 The Social Construction of Vulnerability in the Municipalities of Rio Grande do Sul

The floods that struck Rio Grande do Sul between September 2023 and May 2024, resulting in the largest climate disaster in the state's history, offer a privileged critical case for applying the theoretical instruments discussed in the previous sections. Successive state decrees recognized states of emergency and public calamity in hundreds of municipalities, evidencing unprecedented magnitude in the country's recent history of hydrological disasters (Rio Grande do Sul, 2024). The strictly sociological reading proposed in this article, however, rejects the interpretation of the event as an isolated climatic fatality, understanding it instead as a regional and situated manifestation of the New Climatic Regime described by Latour (2020), articulated with the social and unequal production of risk characteristic of Beck's risk society (Beck, 2011).

It is observed, in this sense, that the spatial distribution of human damage did not follow, in a linear fashion, the recorded rainfall intensity, but instead correlated strongly with pre-existing indicators of municipal institutional capacity, such as the



formalization of contingency plans, the structuring of incident command systems, and the existence of municipal warning systems articulated with federal monitoring agencies. Municipalities historically marginalized in the distribution of risk-management infrastructure investment concentrated, proportionally, the highest rates of deaths and missing persons, corroborating, in the context of Rio Grande do Sul, the thesis that institutional vulnerability functions as a structural mediator between the hydrometeorological event and social harm (Tierney, 2014).

5.2 Subnational State Capacities and the Fragility of Multilevel Governance

The magnitude of the 2023-2024 disaster further exposed the limits of multilevel governance in the Brazilian civil defense and protection system, marked by pronounced asymmetry of capacities among the federal government, the states and, above all, the municipalities, the latter formally responsible for the first response, yet frequently lacking the technical personnel, budget and minimal institutional capacity required to fulfill this role. This asymmetry reproduces, at the subnational scale, the broader diagnosis formulated by Beck (2011) regarding the unequal distribution of risks: municipalities with lower fiscal and institutional capacity, typically also those with less political weight in federative bargaining, are structurally more exposed both to the climate event itself and to the subsequent institutional response failures.

Valencio's (2009; 2014) critique of the normalization of exceptionality applies with particular acuity to the case of Rio Grande do Sul, in which multiple municipalities in the affected regions had already experienced prior extreme events without such experience translating into systematic preventive investment. This is, therefore, a pattern that corroborates the insufficiency of purely technocratic approaches discussed in section 4.2: the mere availability of weather warnings, however technically precise, proved incapable of producing an adequate protective response in the absence of local institutional capacity to translate those warnings into effective evacuation and shelter action.

A concrete example of this asymmetry can be observed in the unequal distribution of hydrological monitoring equipment and warning systems among the affected municipalities, historically concentrated in regional centers of greater economic and demographic weight, to the detriment of smaller municipalities more financially



dependent on state and federal transfers. This distribution pattern, far from random, reflects the very logic of federative bargaining described by Beck (2011) and reinforces the need for compensatory policies aimed at equalizing institutional capacities among municipalities of different sizes, lest the next hydrometeorological crisis again concentrate its most severe effects precisely in the territories that have historically been most vulnerable.

5.3 Regional Development in Rio Grande do Sul and the Hypothesis of Landing in a Risk Territory

The regional economy of Rio Grande do Sul, historically structured around river-based agroindustrial production chains and the occupation of floodplains that are highly productive from an agricultural standpoint, particularly illustrates Latour's hypothesis that, under the New Climatic Regime, it becomes necessary to radically rethink where and how territories land. The historical concentration of productive, urban and logistical infrastructure in floodplains, a regional development decision made under climatic conditions distinct from the present one, now proves incompatible with the new hydrometeorological volatility associated with anthropogenic climate change. The challenge posed to regional development in Rio Grande do Sul is not, in this sense, merely technical, a matter of rebuilding levees and drainage systems, but civilizational, in the Latourian sense of the term, requiring a reformulation of the very parameters of territorial occupation and of the regional production model in the face of the new climate normal.

For this reformulation to be effective, it cannot dispense with the horizontal and multilevel integration discussed in section 6, nor can it ignore the critique of technicism systematized by Brazilian disaster sociology in section 4, on pain of repeating, in a new crisis, the same patterns of emergency response disconnected from structural transformation.

It should finally be stressed that the hypothesis of landing in a risk territory, discussed in the previous subsection, should not be interpreted as a recommendation for the abandonment or generalized retreat of regional economic activities, but rather as a call for the sociologically informed requalification of territorial occupation criteria, so as to reconcile the productive vocation of Rio Grande do Sul with the limits imposed by the new climate volatility. It is, ultimately, a matter of shifting the axis of regional debate



from the piecemeal confrontation of each extreme event toward the construction of structurally more resilient territorial development trajectories, which necessarily presupposes the incorporation of the climate variable into medium- and long-term regional planning.

6 Discussion: Toward a Research and Public Policy Agenda under the New Climatic Regime

The integrated analysis of the three theoretical axes mobilized, the civilizational-planetary axis of Latour, the structural axis of Beck, and the territorial-institutional axis of the social vulnerability literature, suggests that confronting disasters in Rio Grande do Sul demands a paradigmatic shift that transcends the technicism criticized by Valencio (2014). At the outset, it should be acknowledged that, under the New Climatic Regime, the distinction between natural disaster and social disaster loses analytical meaning, such that regional development public policies can no longer be formulated independently of the climate variable, on pain of themselves producing new risks.

The discussion presented here corroborates, on another front, even if only partially, Beck's thesis of the democratization of risk, insofar as events such as the 2023-2024 floods struck municipalities of distinct socioeconomic profiles. It is imperative, however, to qualify this democratization in light of the Brazilian critique: although the climate hazard does not distinguish social class, the differential capacity for response, recovery and reconstruction remains strongly stratified, such that the long-term recovery phase tends to reproduce, and even deepen, pre-existing inequalities, contradicting any naive reading of full risk democratization.

Finally, this article's original contribution is situated in the proposition that the governance of civil defense and protection in Rio Grande do Sul needs to transition from a reactive, sectorialized model toward a horizontal and multilevel governance architecture, capable of integrating civil defense, social assistance, health, education, urban planning and public security around shared risk-management protocols, with genuine social participation at the center of the formulation and monitoring of these policies, as advocated by Valencio (2009) and corroborated by the international institutional vulnerability literature. It is understood that, within this integrated architecture, overcoming technicism does not mean abandoning technique, but rather



subordinating it to a sociologically informed rationality, attentive to the symbolic, psychosocial and political dimensions of the social suffering produced by disasters.

7 Concluding Remarks

This article aimed to analyze, from a sociological perspective, the relationship between disasters, climate change and regional development in Rio Grande do Sul, taking as its central theoretical reference the concept of the New Climatic Regime formulated by Bruno Latour. The theoretical review carried out made it possible to systematize three complementary analytical axes, namely, the civilizational-planetary axis of the New Climatic Regime and the Anthropocene, the structural axis of Beckian risk society, and the territorial-institutional axis of the international and national social vulnerability literature, an articulation that, insofar as the bibliographic review conducted allows one to verify, remains little explored in the literature specifically addressing regional development in the context of Rio Grande do Sul.

With respect to the specific objectives, it was found that international disaster sociology has, over recent decades, migrated from the hazard paradigm to the vulnerability paradigm, a shift widely incorporated and radicalized by Brazilian disaster sociology, particularly through Norma Valencio's critique of national civil defense technicism and of victim-blaming as an institutional discursive mechanism. The discussion of the case of the 2023-2024 floods in Rio Grande do Sul, in turn, showed that the distribution of human damage correlated strongly with pre-existing indicators of municipal institutional capacity, empirically corroborating, in the regional context of Rio Grande do Sul, this article's central thesis that disasters function as revealers, rather than creators, of pre-existing structural vulnerabilities.

The theoretical articulation proposed in this article further suggests that the training of technical personnel and public managers linked to civil defense and protection should systematically incorporate content from disaster sociology and social risk theory, currently absent or marginal in most professional training curricula in the field. This formative gap contributes to reproducing the very technicism criticized throughout this article, insofar as managers trained exclusively in engineering, meteorology or administration tend to reproduce, even if involuntarily, the institutional indifference to multidimensional social suffering identified by Valencio (2014). Overcoming this



formative gap thus constitutes a necessary, though not sufficient, condition for the effective transition from the technicist model to the horizontal and multilevel governance model proposed in this article.

It should also be noted that the sociological reading proposed in this article does not claim to exhaust the complexity of the phenomenon studied, but rather to offer an interpretive framework capable of guiding future investigations into the relationship between disasters, regional development and climate change in other Brazilian subnational contexts. The sociotechnical dispute surrounding the very definition of disaster, discussed in section 3.1, and the triad of disorderly urbanization, institutional precariousness and exclusion, systematized in section 4.1, offer analytical categories that are transferable to other regions of the country subject to extreme climate events, which reinforces the potential for theoretical, though not statistical, generalization of the conclusions presented here.

From an authorial standpoint, it is maintained that confronting disasters under the New Climatic Regime demands the definitive overcoming of the technicist risk-management paradigm historically hegemonic in Brazil, in favor of a horizontal, multilevel and socially participatory governance architecture, capable of integrating the multiple sectoral policies involved in the production and reduction of regional vulnerability. It is acknowledged, as a limitation of the present essay, that its character is theoretical rather than strictly empirical, which is why it is suggested, as an agenda for future research, that the theoretical instruments systematized here be operationalized through comparative empirical studies among municipalities of Rio Grande do Sul with differing institutional-capacity profiles, articulated with official municipal capacity indicators and primary data on deaths, missing persons and displaced persons, so as to test, with greater methodological robustness, the theoretical hypotheses formulated here regarding the relationship between institutional vulnerability, regional development and disasters under the New Climatic Regime.

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